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Physical Environment

The City of Minneapolis enjoys one of the finest urban environments in the country. The physical environment section contains information on the condition of the city and also identifies the efforts that are being made to protect and enhance the city's environment.

The order of Physical Environment chapter contents was modified for 1998 to more closely coincide with Environmental Coordinating Team (ECT) Working Group categories of LAND & SOIL, WATER, and AIR.

The information and contributions for this chapter were derived from many sources, including the following: Park and Recreation Board: Vegetation Management and the Urban Forest, Water Quality; Environmental Management: Management of the Physical Environment, Land & Soil, Environmental Response, Sustainable Development; Metropolitan Council: Land Use; Department of Public Works: Water, Water Quality. Metropolitan Airports Commission: Noise.

This chapter can also be found on the city's web site at: *www.ci.minneapolis.mn.us/planning*

Minneapolis will manage the use of the city's environmental resources (including air, water and land) in order to meet present needs while considering future concerns.

The Minneapolis Plan (draft)

There are numerous tools and strategies by which the city manages, protects, and sustains the Physical Environment. In some cases, federal, state, regional, or other mandates guide city action and policy. In others, the city has developed additional tools that help sustain a healthy physical environment which meets social, economic, and ecological wants and needs now, and will continue to do so in the future.

Environmental Coordinating Team

As a bold, new approach to confronting problems associated with past industrial and land use practices, the Mayor and City Council created the Environmental Coordinating Team (ECT) in 1994. The ECT is charged with maintaining and improving both the environmental and economic health of the city, as well as developing programs to provide for a sustainable future. The ECT consists of the directors of the Department of Operations and Regulatory Services, the Planning Department, the Department of Public Works, the Department of Health and Family Support, the Minneapolis Park and Recreation Board, the Minneapolis Community Development Agency, and the City Attorney.

The ECT provides a framework for the regular exchange of information on environmental issues and a forum for the development of consensus. While the ECT is broadly concerned with the stewardship of the natural resources of the city, a Working Group structure allows targeting of priority issues of particular importance. Working Groups are composed of city staff and representatives from neighborhoods, businesses and non-profit organizations, and are chaired by city staff. The four Working Groups and their dominant issues in 1998 were Land (contaminated sites), Water (watershed management), Air (energy), and Sustainable Development (land use compatibility). To further enhance the city's environmental effort, a Citizen's Environmental Advisory Committee (CEAC) has also been formed to provide assistance and advice to the city's efforts with its principal focus on sustainable development.

Because of its coordinated, resource-based approach, the Environmental Coordinating Team has provided the City of Minneapolis with greater accountability on environmental matters. Previously, a department or agency dealt only with its piece of an environmental problem; none bore responsibility for the whole. The new approach offers the hope of significant enhancements of the soil, air, and water of Minneapolis, resulting in a cleaner environment and a healthier economy. City residents, businesses and neighborhoods all benefit from this new direction for the environmental protection, conservation and management efforts of the City of Minneapolis.

Sustainable Development

The City of Minneapolis has endorsed sustainability through the Environmental Coordinating Team. The concept is also one of the key ideas incorporated into the draft comprehensive plan, *The Minneapolis Plan*. The idea of sustainability has received broad bipartisan support. By embracing sustainability, the city joins with efforts at many levels of government, including the President's Commission on Sustainable Development, the Minnesota Sustainable Development Initiative, and the Joint Center for Sustainable Development established by the National Association of County Organizations and the U.S. Conference of Mayors.

As defined by the United Nations, a sustainable society meets the needs of the present without sacrificing the ability of future generations to meet their own needs. The idea of sustainability implies that the City of Minneapolis and its residents should be wise stewards of natural resources, wasting as little as possible.

Some of the strategies Minneapolis is implementing to create a more sustainable city include the following: a balanced and integrated public transportation system; neighborhoods with a mix of housing, employment and services that allows most daily needs to be met by bicycle or on foot; greater emphasis on infill and adaptive reuse of buildings; protection of ecologically sensitive areas; ongoing energy conservation and waste reduction/recycling programs. Mixing of land uses and reducing reliance on the automobile are also expected to result in a city with pedestrian and public spaces that encourage activity, a stronger sense of livability, and friendly density.

Generally, development patterns in the metropolitan area indicate that the demand for housing, commercial and office space, parking, and shopping is satisfied by the use of large expanses of land. When growth in Minneapolis is accommodated through strategies including infill, increased density in underused areas, and adaptive reuse of existing older structures, then land already committed to the urban fabric is used more efficiently, strengthening the entire region at its core and providing invaluable models of compact urban form.

Environmental Review

Introduction

The Minnesota Environmental Review Program requires that environmental reviews be completed for projects which exceed certain thresholds that deal with size and with the nature of the project (e.g. large commercial, residential or industrial projects; hazardous waste facilities; and projects that impact historic resources). In most cases, the law requires the city to be respon-

sible for the environmental review for projects located within Minneapolis. The law defines the content and scope of the review and the process and timeline for its completion.

The purpose of the review is to disclose the potential environmental impacts of the project and ways to avoid or minimize them. Permitting agencies, including the city, rely on this information for their permitting decisions. The environmental review program has no authority of its own to require that anything be done about any environmental effects disclosed, no matter how significant. It is left to the regulating authorities to implement the protection measures identified in the environmental review.

The two most common reviews are the environmental impact statement (EIS) and the environmental assessment worksheet (EAW). The EIS is a very thorough study of the potential environmental effects of the project and of reasonable alternatives to the project. An EAW is a much briefer review that is intended to screen projects that may have the potential for significant environmental effects. If the EAW leads to the conclusion that a project may pose significant environmental risks, then an EIS must be prepared as well.

Alternative Urban Areawide Review
The city also employs the relatively new process called Alternative Urban Areawide Review (AUAR). The AUAR is a blend of the EAW and the EIS. It merges the scope of an EAW with a level of detail that is closer to an EIS. Like an EIS, the AUAR includes alternative scenarios and a very specific mitigation plan.

An advantage of the AUAR approach is that it involves not a particular project, but rather a (generally) larger area defined by particular opportunities or constraints. Therefore, its results have the potential to guide multiple projects and also to better assess the area's carrying capacity, or ability to absorb development without significant degradation.

The AUAR will substitute for the preparation of any EAWs or EISs that would be required for specific projects within the AUAR review area, provided the projects are consistent with the assumptions made in the AUAR. Specific projects also must not exceed the impacts described in a "maximum development" scenario and the project developers must commit to implement any measures called for in the mitigation plan.

1998 Environmental Reviews
The city was involved in six major state-mandated environmental reviews in 1998:

Mandatory EAW for the 444 Marquette Project: The project is a 20-story office tower (310 feet) to be located at 444 Marquette in downtown on the former site of the Powers Department Store. It will include approximately 690,000 gross square feet (gsf) of office space for approximately 2,500 office workers and about 300 parking stalls on three to four levels both below and above grade. The floor area ratio (FAR) for the project is 15. Two existing skyways will connect the project to Gaviidae II and the Fifth Street Towers. There is a potential for retail at both the street and skyway levels. The primary issues addressed in the EAW included traffic, transit and parking impacts; conformance with plans; and pedestrian-level winds and shadows. The EAW includes a Transportation Management Plan designed to encourage the users of the building to rely on the alternatives to the automobile (bus, bike, car pool and walk). Expected to open late in 2001, the project includes no public funds.

Mandatory EAW for the Washburn Crosby Utility Building and Stone Arch Lofts Project: In 1998, the Minneapolis Community Development Agency (MCDA) demolished the Washburn-Crosby Elevators #2 and #3 which were located at Second Street South and Tenth Avenue South. Almost a century ago, both of these elevators were part of the large Washburn-Crosby Milling Complex which dominated the West Side Milling District. At least one of the elevators was within and listed as a "contributing" structure to the nationally and locally designated Saint Anthony Falls Historic District. Historic preservation issues were the primary focus of the EAW. Central to this discussion was the potential for reuse.

Discretionary EAW for the Block E Project: The Block E project is an entertainment/hotel complex that will include 95-100,000 gross square feet (gsf) of theaters, 50,000 gsf of restaurants, 60-70,000 gsf of retail, a 240-350-room hotel and a parking ramp for 544 vehicles to be located on the block bounded by Sixth and Seventh Streets, Hennepin and First Avenues. The FAR for the project is 3. In order to accommodate the project, the city will demolish parts of the Schubert Theater currently located on the site and move the theater one block north to a new site located on the north side of the Hennepin Center for the Arts at a public cost of approximately $28 million. Total Block E project development costs (not including the Schubert relocation) are approximately $100 million including $38 million in public expenditures primarily for land acquisition, a public parking garage and public plazas and skyways. Tenant improvements are expected to cost in excess of $25 million. New employment is expected to be approximately 450 full-time equivalent (FTE) jobs. The primary issues addressed in the EAW included traffic, transit and parking impacts; conformance with plans; and historic preservation. The EAW includes a Transportation Management Plan. Construction was expected to begin in the fall of 1998.

Mandatory EAW for the 50 South Sixth Street Project: The project calls for a 30-story general office tower in downtown Minneapolis consisting of 805,000 gsf to be located on the southeast portion of the block between 5th and 6th Streets, Nicollet Mall and Hennepin Avenue. The project will include 40,000 gsf of retail at the street and skyway levels, seven floors of parking, and offices on 22 floors. The structure will be about 383 feet tall, and have a FAR of 17. New employment is expected to exceed 3,200 FTE jobs. The primary issues addressed in the EAW included traffic, transit and parking impacts; conformance with plans; and pedestrian-level winds and shadows. The EAW includes a Transportation Management Plan. No public funds are involved in the project.

Mandatory EIS for Phase II of the 1000 Nicollet Project: The Phase II project is located on the south half of the block bounded by Tenth and Eleventh Streets, Nicollet Mall and LaSalle Avenue and is being developed for Target Stores, a division of Dayton Hudson Corporation. In March 1997, an EAW was completed for both phases of the 1000 Nicollet project assuming a Phase II building of approximately 300,000 gsf. Construction of Phase I is now complete on the north half of the block.

In January 1998, based on the success of Phase I, the project proposer decided to house many of Target's scattered departments in one facility and to increase the size of Phase II to accommodate this consolidation. As a result, it was determined that Phase II would be 1,250,000 gsf in size and be approximately thirty-five (35) stories, with an additional mechanical penthouse for a maximum possible height of 575 feet. The new Phase II building exceeded the threshold size for a mandatory EIS. The Phase II project will consist of approximately 1,235,000 gsf of general office and support areas, a maximum of up to 15,000 gsf of retail space, and two levels of underground parking to accommodate approximately 260 parking spaces. The FAR of Phase II alone is 21 and the FAR for the entire project is 15. Approximately 3,500 people will work in the two-phased development. Construction may begin as early as January 2000 with completion as early as January 2002. No public funds will be used to finance either of the two phases of the project.

The primary issues examined in the EIS included traffic, transit and parking impacts; conformance with plans and zoning; heating and cooling impacts; pedestrian-level winds and shadows; and historic preservation. The EIS includes a revised Transportation Management Plan. The Final EIS is expected to be approved in February, 1999.

AUAR for the SEMI Area: Late in 1997, the city initiated a major environmental review for the entire 300-plus-acre SouthEast Minneapolis Industrial (SEMI) Area using the Alternative Urban Areawide Review (AUAR) process (see above), and focusing on existing land uses, soil condition, groundwater pollution, and revising the adopted master plan for the Area.

When adopted, the AUAR will substitute for the preparation of any EAWs or EISs that would be required for specific projects within the SEMI Area, provided the projects are consistent with the assumptions made in the AUAR. Specific projects also must not exceed the impacts described in a "maximum development" scenario and the project developers must commit to implement any measures called for in the mitigation plan. The city expects to compete the AUAR by mid-1999.

Other Environmental Reviews
The city completed or commented on several other environmental reviews in 1998 including the following:

Federal Environmental Assessments: The city completed Federal Environmental Assessments for three minor projects and the following major reviews:

- **Sumner Field Housing:** The project is to demolish this public housing project.

- **FY 1998 Consolidated Plan:** Each year the city completes this review of its plan to spend federal program dollars. The primary focus is on heritage preservation issues.

City comments on the environmental reviews of other agencies: The city also commented extensively on three other projects which involved environmental issues:

- **Kondirator:** The Minnesota Pollution Control Agency is responsible for completing an EAW on this proposal to construct a large metal shredding operation at the American Iron and Supply Company's scrap yards located at 2800 Pacific Street North on the banks of the Mississippi River. The city has played an active role throughout the lengthy environmental review process for this controversial project.

- **Final EIS on the Airport:** The city provided comments regarding the Dual Track Airport Planning Process Final Environmental Impact Statement completed by the Metropolitan Airport Commission (MAC) for the Minneapolis-Saint Paul International Airport. The comments highlighted the city's traditional concerns associated with aircraft noise, the number of flight operations, flight path alignments, and economic impacts.

- **Runway 4-22 extension:** The city commented on the federal Environmental Assessment completed by the MAC regarding the proposal to build a permanent 1,000-foot extension to Runway 4-22 and temporary extensions to Runways 12R-30L and 12L and 30R.

The total area of the city is 59 square miles or 37,516 acres. Residential uses represent the single largest type of land use - slightly more than 53 percent of the city's total land area. Public and Recreational uses rank second in land usage. The third largest land use is industrial land. Lakes, rivers and streams cover 6 percent.

Land Use

Land use information has been provided by the Metropolitan Council. The land use totals were developed from air photos. The information was digitized into the Metropolitan Council's computer using PC ArcInfo.

Existing Land Use: 1990

The current classification system is different from the prior system which was reported in past State of the City reports. The Metropolitan Council's land use coding of individual parcels is considered to be more reliable than the system used by the City of Minneapolis Assessor's Office. The Metropolitan Council information is also valuable because it includes data from as far back as 1970. The table below shows the number of acres of land in each classification for the years 1970, 1980, and 1990.

MINNEAPOLIS LAND USAGE - 1970 TO 1990
In Acres

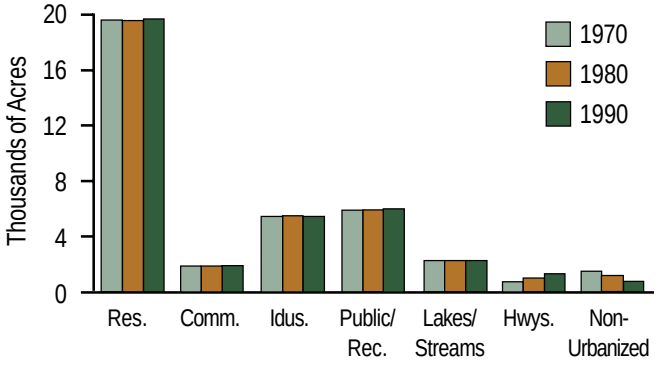
	1970	1980	1990	% of Total	Change 1970-90
Residential	19,583	19,567	19,676	53%	+ 93
Commercial	1,887	1,887	1,909	5%	+ 22
Industrial	5,448	5,503	5,460	15%	- 64
Public & Recreational (Parks)	5,913	5935	5,986	16%	+ 73
Lakes and Streams	2,248	2,248	2,271	6%	+ 23
Highways >200' R.O.W.	748	1006	1298	3%	+ 550
Non-Urbanized	1,504	1,185	769	2%	- 735
Total	37,331	37,331	37,369*	100%	+ 38*

*The Ryan Lake annexation occurred between 1980 and 1990.

The preceding table shows that the area of the city increased slightly between 1970 and 1990 because of the addition of the Ryan Lake annexation in the northwest corner of the city. This property was annexed by the City of Minneapolis at the request of the City of Robbinsdale.

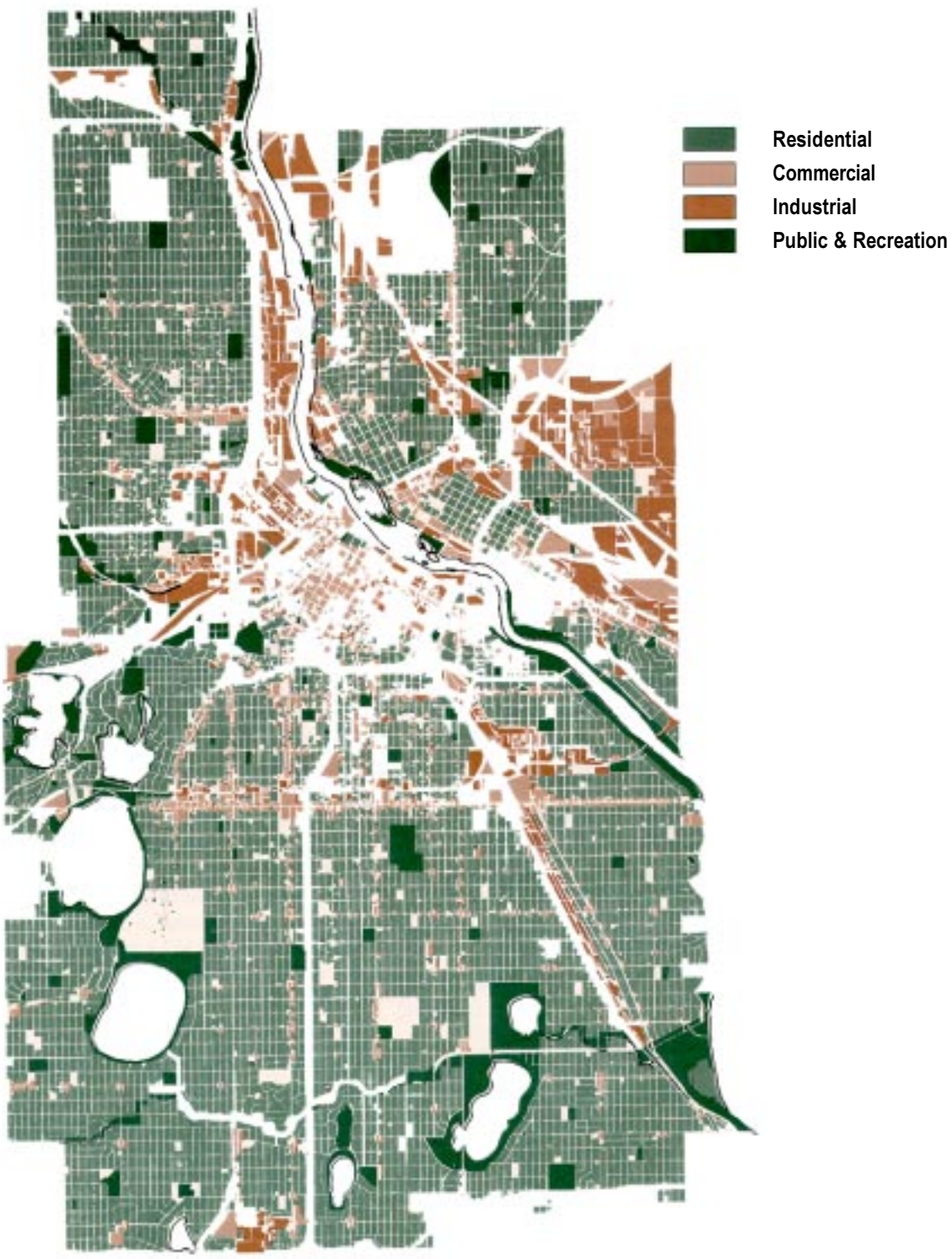
Residential uses account for more than half of all land use in the city. The next largest category of uses is Public and Recreational. This classification includes all the schools, hospitals, cemeteries, and parks in the city. The use 'Highways' had the greatest 20-year increase. Land was converted to allow the freeway system and Hiawatha Avenue to be built. The amount of Non-Urbanized Land (land that is vacant or wetlands) decreased by more than one square mile between 1970 and 1990. Only about one square mile in scattered locations throughout the city remains vacant.

LAND USE: 1970, 1980 AND 1990



LAND USE - 1992
(In Acres)

Community	Residential	Commercial	Industrial	Trans., Comm. and Utilities	Social/ Cultural	Undeveloped and Unused	Total
Calhoun Isles	1,014	1,401	23	954	612	73	4,077
Camden	1,393	121	135	972	326	119	3,066
Central	131	274	156	990	110	1,844	3,505
Longfellow	1,252	149	122	858	405	18	2,804
Near North	1,192	160	194	998	237	107	2,888
Nokomis	2,027	42	8	1,895	701	9	4,682
Northeast	1,585	179	444	1,705	537	190	4,640
Phillips	335	101	45	417	92	52	1,042
Powderhorn	1,486	139	21	1,075	196	35	2,952
Southwest	2,518	127	42	1,442	667	35	4,831
University	606	364	655	1,331	323	154	3,433
Total	**13,539**	**3,057**	**1,845**	**12,637**	**4,206**	**2,636**	**37,920**


Residential
Commercial
Industrial
Public & Recreation

Vegetation Management and the Urban Forest

Vegetation Management

The wide range of vegetation found throughout the city creates a beautiful , functional and diverse landscape for city residents and visitors to use and enjoy. There are large expanses of turf grass and formal flower gardens. Tall stately trees grace many of the streets, boulevards and other public spaces. Many natural areas contain native prairie, wetland and forest species. The Minneapolis Park and Recreation Board, responsible for managing park land and significant portions of the urban forest, uses a comprehensive and integrated approach to vegetation management. This approach ensures that impacts and opportunities associated with maintaining existing vegetation and planning new projects are addressed in a balanced manner that maximizes public benefit.

Turf Management - Park areas covered by turf grass are found in a variety of locations and are used in many different ways. As a result, three turf management standards have been developed for these areas.

Athletic Fields: Grass in areas designated and used for scheduled athletic areas will be maintained at a height of 2.5 to 3 inches.

General Park Lands: Grass in neighborhood parks, parkways, and active use areas may exceed 5 inches but will be cut back to 3 inches on a regular basis.

Maintenance and Natural Areas: The remaining turf areas of the park system, including steep hillsides, wet areas and shorelines, will be cut at least once a year to maintain an open landscape and minimize noxious weeds.

Natural Areas - Many of the larger regional parks contain areas that are kept in a wild state. These areas add a variety of color and texture to the landscape, create wildlife habitat, improve water quality, protect shoreline areas from erosion, provide places where people can experience and understand ecological principles, and reduce maintenance costs and the use of chemicals and fossil fuels. Sites such as Roberts Bird Sanctuary, Quaking Bog, Eloise Butler Wildflower Garden and Bird Sanctuary and three remnant prairies are actively managed through a series of practices including prescribed fires, mowing and removal of exotic species such as buckthorn.

Conversion Program - Recognizing the many benefits of natural areas and native plants, the MPRB has converted a number of sites to native species. Although most of these sites involved conversions from turf grass to prairie grasses and wildflowers, there have been a number of wetland, savanna and forest restoration projects. Since these conversions take many years, the sites will continue to be monitored and managed to enhance their overall integrity and appearance. Examples of conversion projects include the Cedar Meadows Wetland, Lake Nokomis Wet Prairie, Powderhorn Park Shoreline, Children's Forest along Shingle Creek, Minnehaha Park Savanna and Ridgway Parkway Prairie.

Urban Forest

Mature, healthy trees in the city provide many pleasures and serve many purposes. Strategic tree planting is a proven complementary approach to conserving energy because trees and other foliage provide shade and form windbreaks. Trees clean the air, help transform pollutants, and convert carbon dioxide into oxygen. Interception and storage of rainfall by trees help to lower storm water runoff volume. Mature trees provide a leafy canopy over city streets for three seasons of the year, calming traffic, buffering noise and beautifying the city in simple and effective ways.

Storms - During May and June, four storms prompted the Minneapolis Park & Recreation Board's Forestry Section to implement a Storm Damage Emergency Response Plan. The May 15th storm caused most damage in the following neighborhoods: Cedar Isles Dean, Kenwood, Bryn-Mawr, Harrison, Near North, Sumner-Glenwood and Lind-Bohanon. The second storm occurred on May 30th. This storm caused most damage south of 42nd Street and in the Prospect Park Neighborhood. The June 24th storm affected spot locations in the north and northeast areas of the city as well as near Lake Calhoun and Lake Harriet. The final storm hit on June 26th and followed a path almost identical to that of May 30th with further damage in the Lake Nokomis area.

Primarily impacted were boulevard trees and park trees. An estimated 2,500 trees were lost from city streets including those directly destroyed or hit by other trees and those removed due to structural damage. Tree loss in city parks numbered approximately 1,000, with greatest losses at Cedar Lake, Lake Nokomis and North Mississippi Parks.

By the completion of debris hauling in mid-September, more than 4,000 tandem size truck loads of wood waste had been taken to holding sites. The estimated cost of storm clean up in the city surpassed $3 million. Relief of 75 percent, approximately $2.1 million, will come during 1999 from the Federal Emergency Management Agency (FEMA). Storm-related tree replacement costs exceeded $600,000.

Plantings - During 1998, Minneapolis Park and Recreation Board Forestry staff planted nearly 3,300 new trees in public locations throughout Minneapolis, including the following:

The *1998 Minneapolis Arbor Day* celebration took place at Keewaydin School and Park with the planting of 72 trees. More than 350 students, parents, and neighborhood volunteers helped with

the plantings and learned about ongoing tree care. Funding for this project was provided by MnReLeaf and by the Neighborhood Revitalization Program.

The Forestry Section partnered with many neighborhoods to plant over 700 trees with funding from the Neighborhood Revitalization Program (NRP). Neighborhood volunteers ensure the success of each project. This program currently accounts for the majority of new plantings in Minneapolis. Since 1992, 8,488 trees have been planted using NRP funds.

More than 800 trees were planted by the Forestry Section as part of the Department of Public Works repaving projects. The Forestry Section and the Department of Public Works and Engineering staff continue to work together in an effort to find innovative solutions to lessen damage to trees and tree roots in these project areas, and to adopt standards and specifications that will improve the longevity and vigor of urban trees planted in pits.

Ninety-one trees were planted through collaboration with the People For Parks (PFP) Urban Reforestation Project. Many beautiful trees throughout the park system have been donated by individuals through the project, often as memorials or as celebrations of significant events.

Over 100 trees were planted for energy conservation throughout the Elliot Park Neighborhood, funded by a UNITREE $10,000 grant.

The many partners that provided crucial funding and collaboration during 1998 included the Neighborhood Revitalization Program, the Minnesota legislature's MnReleaf program, the Minnesota Tree Trust, and the Committee on Urban Environment (CUE).

Dutch Elm Disease - Minneapolis continues to combat Dutch Elm Disease, although the loss this year of 1,190 elms is a 33 percent reduction from 1997 and well below losses of previous years. Dutch Elm Disease levels should remain low due to the Park and Recreation Board Forestry Section's practice of trimming dead wood in elm trees together with an ordinance prohibiting storage of elm wood within Minneapolis. Since 1963, more than 127,000 diseased elm trees have been removed city-wide.

Pest Alert - During 1998, the U.S. Department of Agriculture declared a pest alert for the Asian long-horned beetle, following an outbreak in Chicago. Federal officials determined that the beetle made its way from China by stowing away in untreated wood crates. Unlike many beetles, Asian long horneds are not particular about their hosts. No occurrences were noted in the city in 1998.

Land Recycling

The soil of the city is a valuable natural resource. During the last Pleistocene, glaciers scoured the earth's surface and deposited a fertile loam across the City of Minneapolis. This soil is not only the foundation for structures, it provides valuable nutrients for lawns, gardens and purifies groundwater. When the soil becomes polluted these important functions become jeopardized.

Since the City of Minneapolis draws its drinking water from the Mississippi River, most polluted sites do not pose an immediate threat to the health and safety of the public. The contamination of these sites do, however, pose a threat to the economic viability of the City of Minneapolis.

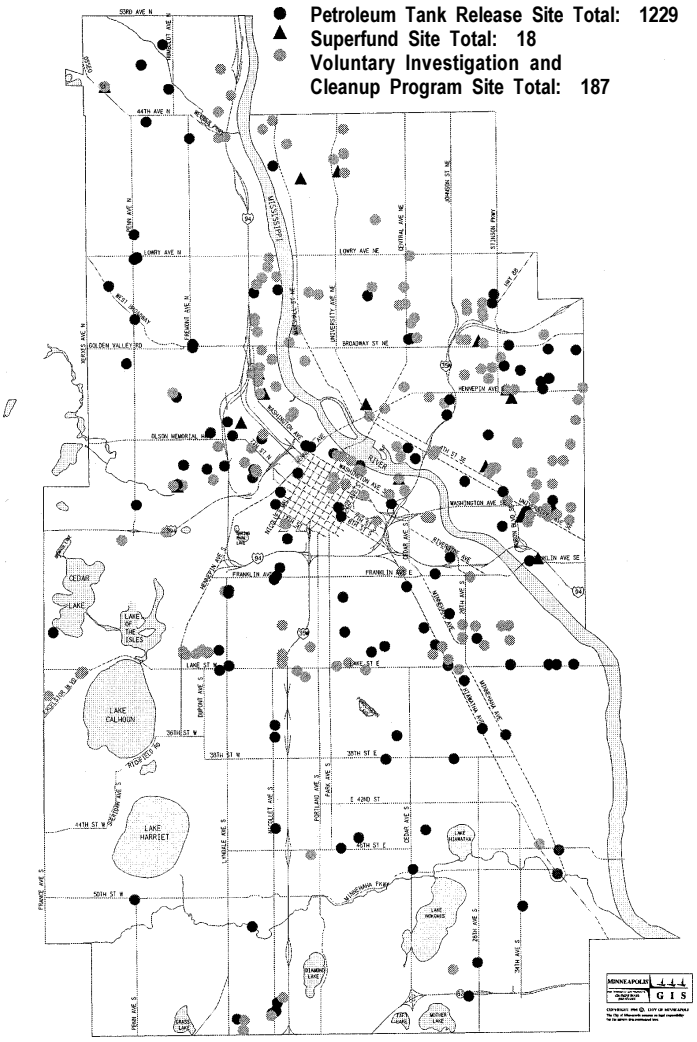
Often, parties responsible for contaminating the land have moved on and are no longer available to finance its cleanup. As a result, tracts of vacant land sit idle and become targets for vandalism, illegal dumping, and blight resulting in an eroded tax base.

Regulatory authority over contaminated sites in Minneapolis is vested with Minneapolis Environmental Management. The Contaminated Sites Working Group, composed of city staff, has been instrumental in the cleanup of contaminated land. Individuals from different governmental agencies and municipalities have been enlisted in an effort to facilitate the cleanup of contaminated land. This group has also been instrumental in passing legislation to provide funds for cleanup of contaminated land. Currently, the group is concentrating on implementing a strategy for the remediation of contaminated land. City environmental staff have developed new cleanup standards, applied cleanup technologies, and developed legislation to finance remediation efforts. Minneapolis is a national model in reclaiming industrial sites.

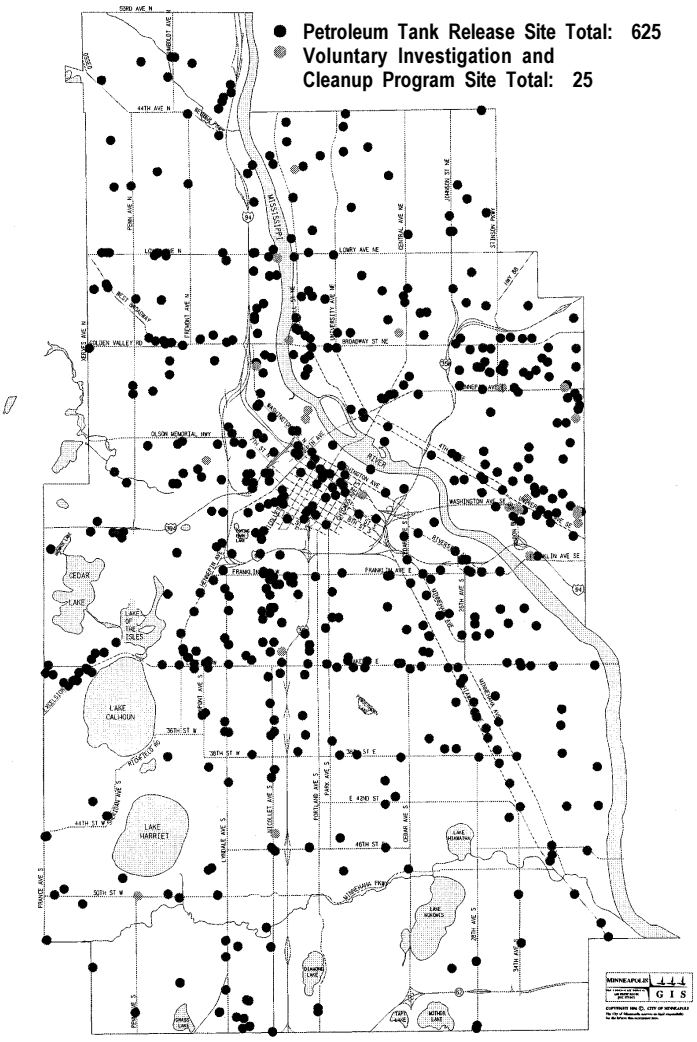
Superfund Site Cleanup - Minneapolis has nineteen State Superfund sites where contaminants have been released to cause an immediate threat to public health or the environment and the focus of Superfund laws such as the federal Comprehensive Environmental Response, Compensation and Liability Act (CERCLA) and the Minnesota Environmental Response and Liability Act (MERLA). Perhaps the most significant contribution of the environmental legislation is the creation of environmental awareness by industries. Industries now operate under strict environmental friendly operational guidelines.

Although no cleanup efforts were finalized in 1998, three sites are near completion: the Minnegasco Gas Works site, the Whittaker site in northeast Minneapolis, and the B. J. Carney site in the Humboldt Industrial Area. When no evidence of contimination remains, these sites will removed from the Superfund list. The sixteen other sites are in various stages of cleanup or monitoring.

CONTAMINATED LAND CLEANUP: OPEN SITES



CONTAMINATED LAND CLEANUP: CLOSED SITES



Petroleum Tank Release Cleanup - Since 1979 there have been 750 confirmed petroleum tank leak sites in the city and 625 have been cleaned since 1987 to standards set by the MPCA. Tank owners who perform cleanups in accordance with MPCA guidelines are eligible for reimbursement up to 90 percent of the total cost of cleanup through the state funded Petrofund program.

Effective December 1998, underground storage tanks (with some exceptions) must meet EPA regulatory requirements. Included are requirements for leak detection, corrosion protection, and spill/overfill prevention. Tanks not meeting state and federal standards must be excavated and removed. Additionally, tanks out of service for more than one year must also be removed in accordance with the State Uniform Fire Code and State of Minnesota Rules.

Voluntary Investigation and Cleanup Program - This program was created by the MPCA to encourage voluntary participation, investigation, and cleanup of contaminated land. A few of the wide range of possible contaminants are lead, pesticides, and wood preservatives. This category is often referred to as 'brownfields' (see Brownfield Redevelopment, below). Participants are required to meet MPCA standards to receive a certificate of completion. The certificate is a written guarantee providing protection to property owners from future liability. Since1986, over 200 properties within the city have entered the voluntary program, and over 25 sites have received completion certification.

Brownfield Redevelopment
The term 'brownfields' is understood to mean properties contaminated by a prior use that has resulted in the properties being left abandoned, idled, or under-used. When cleaned up, brownfields are suitable for redevelopment. Most of these sites cause serious concerns regarding environmental liability for potential developers, but are not contaminated enough to immediately threaten public health or the environment. Because there is no known immediate threat, these sites are not identified as Superfund sites, and neither the Minnesota Pollution Control Agency (MPCA) nor the United States Environmental Protection Agency (USEPA) will act to clean them up. But without assistance or incentives, few developers are interested in doing so due to environmental liability concerns.

Illegal Dumping
Sites used for illegal dumping vary but often include: abandoned industrial, residential, or commercial buildings; vacant lots on public or private property; and alleys or roadways. Illegal dumping can occur at any time of day but is more common at night or in the early morning hours during warmer months. If not addressed, illegal dumps often attract more waste, potentially including hazardous wastes such as asbestos, household chemicals and paints, automotive fluids, and commercial or industrial wastes.

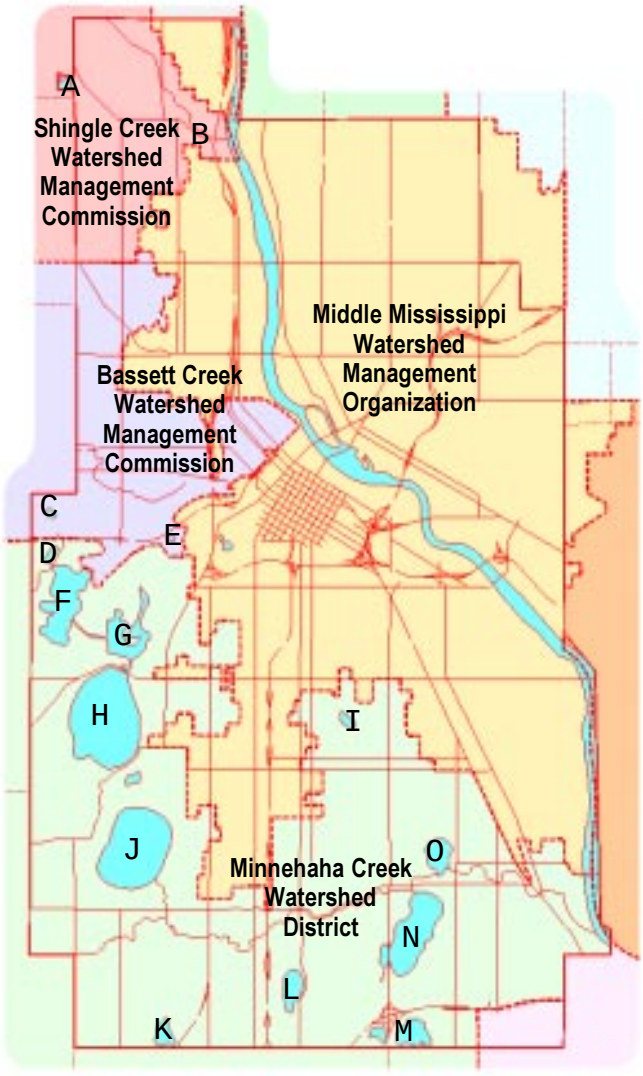
The health risks associated with illegal dumping are significant. Areas used for illegal dumping may be easily accessible to people, especially children, who are vulnerable to the physical (protruding nails or sharp edges) and chemical (harmful fluids or dust) hazards posed by wastes. Rodents, insects, and other vermin attracted to dump sites may also pose health risks. Dump sites with scrap tires provide ideal breeding grounds for mosquitoes, which can multiply 100 times faster than normal in the warm, stagnant water standing in scrap tire casings. Severe illnesses, including encephalitis and dengue fever, have been attributed to disease-carrying mosquitoes originating from scrap tire piles. In addition, countless neighborhoods have been evacuated and property damage has been significant.

The problem of illegal dumping has grown and affects every ward in the City of Minneapolis. Many of these dumpings are difficult, complex, and result in lengthy investigations and frequently take place on contaminated vacant land. Successful prosecution requires eyewitness identification and material evidence. Illegal dumping also strikes at the heart of neighborhood livability. No one wants to live near a site that is the target of illegal dumping. Housing and Environmental Inspections and Solid Waste and Recycling have implemented an aggressive joint enforcement of the illegal dumping ordinance.Water

Minneapolis — "The City of Lakes" — has within its boundaries:

- **The Mississippi River**
- **Bassett Creek, Minnehaha Creek, and Shingle Creek**
- **Brownie Lake, Cedar Lake, Diamond Lake, Grass Lake, Lake Calhoun, Lake of the Isles, Lake Harriet, Lake Hiawatha, Lake Nokomis, Mother Lake, Powderhorn Lake, and Ryan Lake**
- **Birch Pond, Webber Pond, Spring Pond,**
- **Five unnamed wetlands**

WATERSHED MANAGEMENT ORGANIZATIONS, AND IDENTIFYING WATER BODIES



A. Ryan Lake
B. Webber Pond
C. Birch Pond
D. Brownie Lake
E. Spring Pond
F. Cedar Lake
G. Lake of the Isles
H. Lake Calhoun
I. Powderhorn Lake
J. Lake Harriet
K. Grass Lake
L. Diamond Lake
M. Mother Lake
N. Lake Nokomis
O. Lake Hiawatha

Watershed-Based Management
In order to best manage its water resources, the City of Minneapolis has adopted a watershed management perspective, using these natural drainage patterns of the land to better understand how all activities within our watersheds affect the health of our water resources. Keeping our river, lakes, creeks, wetlands and groundwater clean and healthy involves planning on a watershed basis to prevent nutrients, pollutants and sediments from entering our waters. Prevention is the preferred approach because, once a water body has been damaged, it is expensive, if not impossible, to restore.
Four watershed management organizations participate in the administration of water resources in the City of Minneapolis. Each was created to protect, enhance and restore the surface and groundwater resources within its jurisdiction through education, management and enforcement. The newest is the Middle Mississippi Watershed Management Organization, created in 1996. Those previously established are the Bassett Creek Watershed Management Organization, the Shingle Creek Watershed Management Organization, and the Minnehaha Creek Watershed District.

The Mississippi River
The Mississippi River is essential to the ecological health of the region. Additionally, it is an invaluable cultural, historic, and recreational resource. Minneapolis is the first major urban area graced by the Mississippi as it moves through the heart of the country. Indeed, the use of the river for hydroelectric power was the impetus for settling the city.

Heightened interest and concern for the river in recent decades have brought numerous designations and associated plans and regulations for its protection. The importance of the river corridor is recognized by the 1998 presidential designation as a National Heritage River, as well as earlier designations by the National Park Service (Mississippi National River and Recreation Area) and the State of Minnesota (Mississippi River Critical Area). The city's policies and implementation strategies adopted to protect the natural, cultural, historic, commercial, and recreational value of the river corridor are compiled in its Critical Area Plan, currently under revision.

River Corridor Goals
The City of Minneapolis intends to guide the use and development of the Mississippi River corridor to achieve the following general goals:

- Natural Resources - Preserve, enhance and interpret natural resources, protect and preserve the biological and ecological functions of the corridor.

- Visual Quality - Protect and enhance the views to and from the river, and up or down the river, so that people may enjoy the natural beauty of a major waterway in an urban setting.

- Cultural Resources - Preserve, enhance and interpret the archaeological, ethnographic and historic resources of the river corridor.

- Economic Resources - Provide for continued economic activity and development in a manner consistent with the other goals. Protect and preserve the river as an essential element in the systems of transportation, water supply and recreation.

- Neighborhood Revitalization and Stabilization - Leverage the natural beauty, recreation and economic development features of the river as a means of sustaining the quality of nearby neighborhoods and the city as a whole.

- Outdoor Recreation and Tourism - Enhance opportunities for outdoor recreation, education and scenic enjoyment. Continue to make the river an important part of any visitor's appreciation and understanding of Minneapolis. Continue to build the riverfront as a major element of the local and regional parkways systems.

- Public Understanding - Improve the public's understanding of the river and promote public stewardship of its resources. Recognize and strengthen people's relationships with the river as a dynamic part of this community's heritage, quality of life and legacy for future generations.

Source: Mississippi River Critical Area and MNRRA Plan, Preliminary Draft :September 15, 1998

The Lakes
By studying long term trends in basic water chemistry, nutrient levels, overall water quality and biological communities, lake managers can determine which actions would be the most effective in improving the biological health and overall recreational quality of the lakes. In 1998, lake scientists from the Minneapolis Park and Recreation Board monitored 11 of the city's most heavily used lakes. The results were used primarily to estimate the fertility or trophic state of the lakes. By assessing lake fertility, managers can determine if algae and water plants are likely to be problems or if a lake will be clear and beautiful. Lakes that are determined to be very fertile, or eutrophic, can then be managed by reducing nutrient levels to prevent algae blooms.

Lake fertility, or trophic state, is estimated by using water quality measurements and a mathematical formula called a Trophic State Index, or TSI. Scores are calculated using three different lake measurements: water transparency, chlorophyll content and phosphorus levels.

Water transparency is measured with a black and white disk called a Secchi disk. The Secchi disk is lowered slowly into the water until it can no longer be seen. The depth at which it disappears is called the Secchi depth.

Chlorophyll-a indicates how much algae is in a lake. Algae are the tiny one-celled plants that can turn our lakes green. Chlorophyll is the green pigment that plants from trees to microscopic algae use to capture the sun's energy. By measuring the amount of chlorophyll in lake water, scientists can estimate the amount of algae. Most of the city lakes sampled had moderate levels of algae during 1998.

Phosphorus is the most important type of "fertilizer" for most algae. By measuring the amount of phosphorus in the lakes, scientists can get a good idea of how much algae can grow, and if algae blooms will be likely.

Scores range from 0 to 100, with higher numbers indicating more fertility. Lakes with TSI scores below 25 often look like sandy swimming pools while lakes with TSI scores above 75 will be more like pea soup for much of the summer, or will have very dense aquatic plant growth. In the Twin Cities metro area, it is recommended that a TSI score of 59 or lower be maintained at lakes used for swimming. This recommendation is based upon the potential for degraded aesthetic appeal, not public health risks.

In addition to serving as a tool for rating water quality, the TSI is also used to classify lakes according to their trophic status. All lakes fall into one of three trophic states: mesotrophic, oligotrophic, or eutrophic. By knowing which fertility category a given lake falls under, lake managers can predict which problems, if any, are likely to occur and what management strategies will probably be the most effective.

Eutrophic lakes have a TSI value greater than 55 and are considered highly fertile, or productive. They often have an abundance of algae due to high phosphorus nutrient supplies. This high algal growth decreases the transparency of the water and gives the water a greenish or brown color. Mesotrophic lakes have a TSI value from 40 to 55. Due to lower nutrient availability in mesotrophic lakes, they are less productive. This decreased fertility results in less algae growth and clearer water. Oligotrophic lakes have a TSI value of less than 40. They are the least productive of the lakes and have the clearest water.

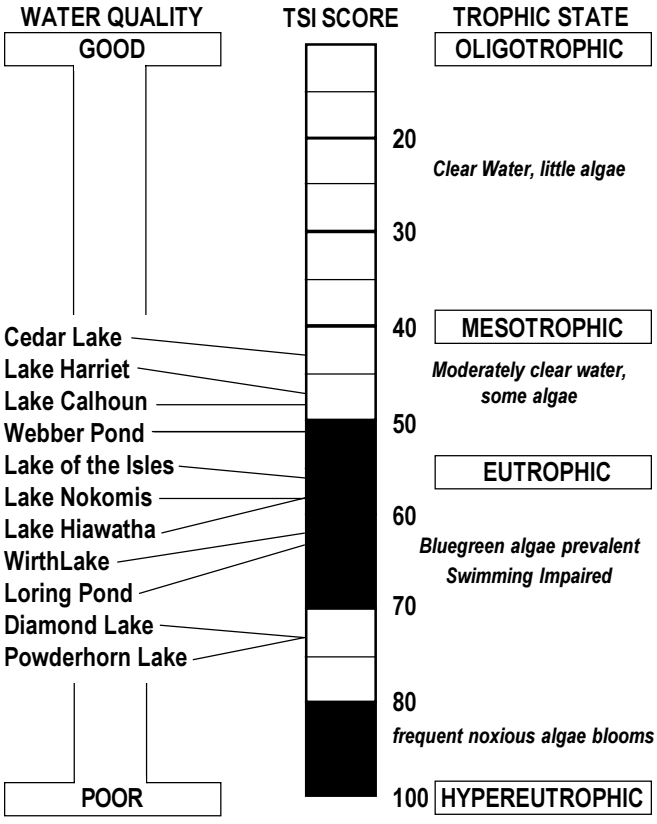
The following table gives the average TSI values for each of the lakes monitored in 1998.

1998 MEAN TSI (MAY-OCTOBER)

	Secchi	TP	Chla	AVG
Lake Calhoun	42.68	51.73	50.44	**48.28**
Cedar Lake	37.31	47.35	43.46	**42.71**
Diamond Lake		78.09	68.06	**73.07**
Lake Harriet	42.02	50.91	48.78	**47.24**
Lake Hiawatha	53.31	63.26	58.58	**58.38**
Lake of the Isles	48.04	56.41	62.34	**55.60**
Loring Pond	56.12	66.08	66.05	**62.75**
Lake Nokomis	52.74	61.24	61.05	**58.34**
Powderhorn Lake	69.12	79.75	71.53	**73.47**
Webber Pond		55.58	46.35	**50.97**
Wirth Lake	57.35	62.83	64.44	**61.54**

The following figure shows where each of the lakes monitored in 1998 rank based on average TSI score and overall trophic state.

CARLSON'S TROPHIC STATE INDEX



The following table shows the average annual growing season TSI values for given lakes over the past six years.

MINNEAPOLIS LAKES TROPHIC STATE INDEX SCORES

Lake Name	1993	1994	1995	1996	1997	1998
Brownie Lake	56	57	62	54	58	NA
Lake Calhoun	52	47	57	43	45	48
Cedar Lake	61	54	64	47	45	43
Diamond Lake	56	67	73	40	67	73
Lake Harriet	46	49	58	49	45	47
Lake Hiawatha	58	57	59	59	59	58
Lake of the Isles	65	58	59	55	52	56
Loring Pond	59	61	65	65	NA	63
Lake Nokomis	57	60	58	61	61	58
Powderhorn Lake	68	66	68	69	76	73
Webber Pond	57	58	58	59	50	51
Wirth Lake	63	64	61	57	59	62

Aquatic Plants Infestation by Eurasian Water Milfoil (*Myriophyllum spicatum*) in Minneapolis lakes was first detected in 1987. Since that time, this invading species has spread to all of the major recreational lakes in Minneapolis, affecting 300 acres of our waters. Eurasian milfoil displaces native vegetation and forms dense surface mats that interfere with recreational activities and reduce the aesthetic value of lakes. In order to alleviate the problems associated with milfoil infestation, the Park and Recreation Board has periodically harvested milfoil from a total of 124 acres in Cedar Lake, Lake of the Isles, Lake Calhoun, and Lake Harriet. The Park and Recreation Board is working with the University of Minnesota in their efforts to develop biological control methods for Eurasian milfoil.

This past summer, the Park and Recreation Board conducted a comprehensive survey of the aquatic plants in the Chain of Lakes and Lake Nokomis, as well as a visual survey of Diamond Lake. Milfoil was the most frequently occurring species in Nokomis and Cedar Lake, though high densities were noted in all of the lakes surveyed. Native species such as Bushy Pondweed (*Najas flexilus*) and Sago Pondweed (*Potomogeton pectinatus*) were recorded in greater abundance in the shallower depths where milfoil tends to be less tolerant of wave action. Coontail (*Ceratophyllum demersum*), another native species, remains competitive with a higher or equal frequency of occurrence to milfoil in both Lake Calhoun and Lake of the Isles.

Water Quality Management

During their lifetime, many lakes will undergo an increase in their trophic status. In a natural setting, the process of eutrophication usually proceeds slowly, occurring on a time scale of centuries. Urbanization, or development of a lake's watershed, often results in a rapid increase in its trophic state. This process, called *cultural eutrophication*, prematurely ages lakes, turning clear lakes into very fertile ones in decades. Several of the lakes in the metro area have been undergoing this accelerated process of eutrophication.

In the Minneapolis area, stormwater runoff is the leading cause of cultural eutrophication. All storm drains in Minneapolis flow directly to a lake, stream, or the Mississippi River. With its high levels of phosphorus and sediment, stormwater runoff is very detrimental to water quality. Much of the current management focuses on reducing the amount of sediment and nutrients flowing into the lakes as street runoff.

Keeping our river, lakes, creeks, wetlands and groundwater clean and healthy involves planning and managing on a watershed basis to prevent nutrients, pollutants and sediments from entering these water bodies. Watersheds are land areas that drain into a lake, stream, river or other water body. They include natural and artificial drainage systems, such as storm sewers, ditches and tile lines. When watersheds are polluted, there is a direct impact on the associated water body.

Chain of Lakes Clean Water Partnership - 1998 marked year four of the Chain of Lakes Clean Water Partnership (CWP) whose goal is to significantly improve water quality in the 7,000 acre Chain of Lakes watershed's five lakes (Brownie Lake, Cedar Lake, Lake of the Isles, Lake Calhoun and Lake Harriet). The partnership consists of the City of Minneapolis, the Minneapolis Park & Recreation Board, the City of St. Louis Park, Minnehaha Creek Watershed District, Hennepin County and Minnesota Pollution Control Agency. An important component of CWP activities is public education and information that describes specific actions area residents and businesses can take to improve water quality.

In November of 1998, the CWP began construction on a three pond stormwater wetland near the southwest corner of Lake Calhoun. Located near West Calhoun Parkway, Zenith Avenue and 38th Street, the wetland ponds will act as filters to remove sediments, nutrients and bacteria from stormwater runoff before it flows into Lake Calhoun. These pollutants negatively affect lakes and streams, as well as the recreational activities associated with them. The Lake Calhoun detention system will treat runoff from an 897 acre watershed draining from the southwest. This watershed currently contributes 37 percent of the total phosphorus load to Lake Calhoun. Modeling for the southwest Lake Calhoun watershed detention system indicates that the system would remove 48 percent of the subwatershed phosphorus load and 13 percent of total Lake Calhoun watershed phosphorus load.

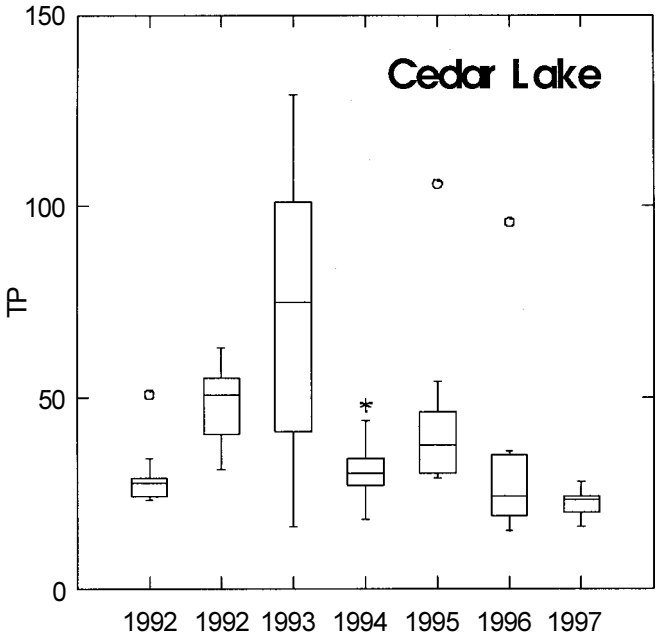
The following table summarizes the specific actions being taken on each lake by the Chain of Lakes Clean Water Partnership (parentheses indicate CWP future actions and total costs reflect project to completion):

Lake	Grit Chambers	Alum Treatment	Wetland/Ponds
Cedar		1996	1996
Brownie			
Isles	one in 1994		
	(three in 1999)	1997	
Calhoun	one in 1995		
	two in 1998	(1999)	(1998-99)
Harriet	two in 1996		
	(one in 1999)	(1999)	1998 (MPOSC)
Total Costs	$700,000	$236,000	$4,713,000

SUMMARY OF ACTIVITY COSTS FOR THE MINNEAPOLIS CHAIN OF LAKES CLEAN WATER PARTNERSHIP IMPLEMENTATION PROJECT FOR 1994 - MAY 1998

	Expenditures	Cost
Education		$ 293,800
Watershed Management Practices		
Grit chambers	598,600	
Street cleaning	502,500	
Stormwater ponds & wetlands	2,746,500	
Other	4,000	$ 3,851,500
In-Lake Improvements		
Alum	106,100	
Erosion protection	198,700	$ 304,800
Monitoring Programs		
Lakes	140,000	
Storm water	252,500	
Beach	18,400	$ 400,900
TOTAL EXPENDITURES		**$ 4,851,000**

Cedar Lake - In 1998, Cedar Lake had some of the clearest water in recent history, as confirmed by 30 years of monitoring data. Although many factors affect water quality, this dramatic improvement is most likely due to the watershed management practices of the Chain of Lakes Clean Water Partnership during the past three years, including alum treatments, construction of a stormwater wetland system at Cedar Meadows and Twin Lakes, implementation of a watershed education program, and increased street sweeping.



Growing season total phosphorus data for 1991 - 1997 (values in ug/L; mean, 25th and 75th percentile box plot).

Lake Harriet Watershed Awareness Project - This project by the Minneapolis Park & Recreation Board, Minnesota Department of Agriculture, and the University of Minnesota Extension Service has two purposes: to inform urban homeowners about living in a watershed and to help them learn how their lawn care habits can affect the quality of urban water. Most past outreach efforts have involved printed materials. In 1998, an educational video and slide presentation were developed, entitled "Every Curb Is A Shoreline: Urban Watershed Awareness - Lawn Care Practices to Protect Water Quality".

Loring Park Pond - Loring Park Pond was drained in 1997 and a geotextile liner installed to reduce loss of water due to exfiltration; an areation system was installed to improve water quality; and the shoreline was vegetated with native wetland/prairie species to reduce erosion and geese usage. During 1998, it was confirmed that exfiltration losses have been reduced to near zero and anaerobic conditions during the summer months have been eliminated.

Air quality in the Minneapolis airshed has improved in recent years. In 1998, the City of Minneapolis drafted a new Air Quality Management ordinance, implemented the Minneapolis Energy Plan, and continued to work on strategies to reduce toxic air emissions.

Air Quality

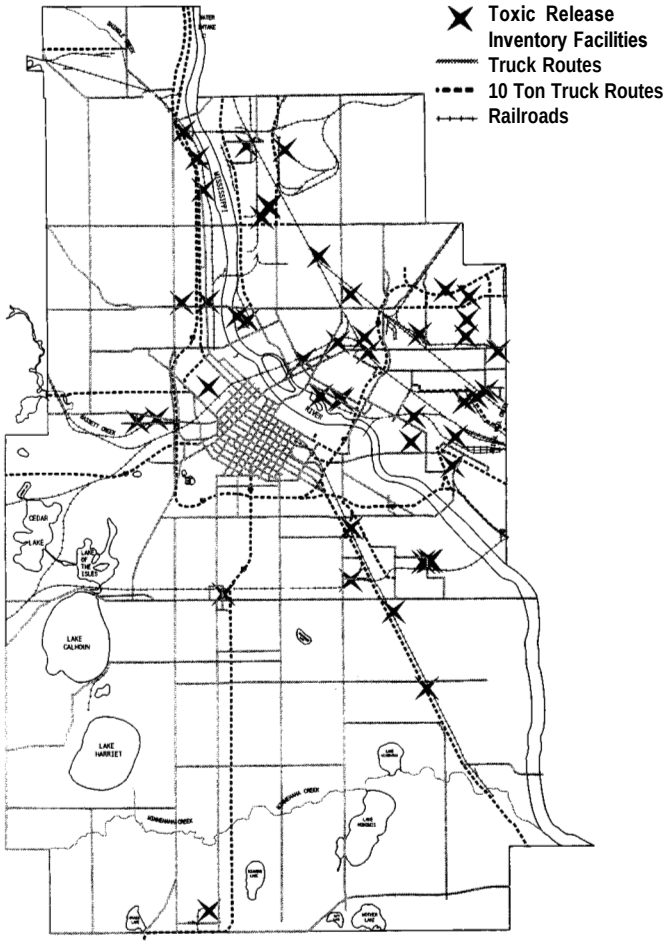
Our air is a resource in the city, just as our water and soil are; but, because air is invisible, most of us take it for granted until we have a problem with odors, emissions or smoke. Air quality in Minneapolis is affected by three major activities; energy production, industry and transportation. Each activity must be addressed when discussing air pollution. The Minneapolis airshed has seen improvements in all three areas in recent years, which has led to an overall improvement in air quality, as evidenced by the annual air quality reports issued by the EPA.

Annually, the EPA compiles a report on the amount of Criteria Pollutants (Lead, Ozone, Sox, Nox, Co, and PM10) emitted nationally. For a number of years the metropolitan area was out of compliance for some of the criteria pollutants. But, in recent years, the trend has changed. Improvements in transportation and industry have led to compliance for all criteria pollutants, with the exception of carbon monoxide. Even carbon monoxide levels are improving and estimates put the area in compliance at present. With all the improvements that have been made, there is still need for further initiatives within the city. The EPA is re-evaluating its particulate matter and ozone standards due to recent health studies (some of which were conducted in the metropolitan area). The city is currently working on ways to meet the proposed changes in EPA standards.

To address hazardous air pollutant emissions from industry, along with the Criteria Pollutant emissions, EPA annually creates a Toxic Release Inventory (TRI) by compiling a list of toxic chemicals emitted by facilities across the country. Information regarding the amount and type of air toxins is provided by the individual facilities in accordance with the Clean Air Act. This data is made available to states and cities for strategic planning and resource distribution.

Currently, the Environmental Management section of the Department of Operations and Regulatory Services uses the TRI report in conjunction with the MN Toxicity Index, developed by the MPCA in 1993, to compare the relative potential effects of chemicals released. By comparing relative toxicity, decisions can be made regarding the best ways to initiate better methods of pollution prevention.

TOXIC RELEASE INVENTORY FACILITIES
COMPILED BY THE MPLS. ENVIRONMENTAL SECTION



A comparative review of Minneapolis' TRI facilities provides the following trends for 1995-1996 (the latest available data due to reporting schedules) indicating that point sources of emissions for the city's largest emitters are being reduced:

- Facilities emitting air pollutants decreased from 30 to 28.
- Pounds of air emissions decreased 35.5 percent.
- Relative toxicity of air emissions decreased 16 percent.

While the EPA has the responsibility for developing regulations to control toxic air pollutants from facilities, the Environmental section has adopted new methods for dealing with these facilities. By targeting the chemicals with the greatest potential for harm, the city is placing resources where it has the best chance for significant pollution prevention. In developing pollution prevention partnerships with industrial facilities, Minneapolis is providing educational technical resources that will result in lower toxic air emissions.

In addition to hazardous or toxic air emissions, the city is also responsible for investigating and resolving citizen and business air quality complaints regarding nuisance odors and smoke. These problems can arise from many sources, including poorly maintained buses, mechanical equipment, restaurant exhaust, industrial processes and construction activity.

A draft ordinance recognizes the existence of a Minneapolis airshed as a natural resource and the need to protect and enhance that resource. In 1998, the city continued implementing the Minneapolis Energy Plan. The Plan consists of four sections dealing with the municipal, residential, commercial/industrial and transportation sectors. Pilot programs and initiatives are underway in all four sections.

1997 saw the adoption of the new federal Clean Air Act Amendments. Environmental staff continue to work with the Environmental Protection Agency staff in Washington, DC and Chicago regarding implementation.

Energy

Urban CO2 Project Update - Minneapolis and St. Paul were jointly selected in 1991 to participate in the Urban CO2 Project, a United Nations-sponsored effort to avert potentially adverse climatic effects projected to occur as a result of climate change. Carbon Dioxide emissions (CO2) are considered the primary contributor to global warming and cause what is termed the "greenhouse effect". Other participants were Portland, Oregon; Denver, Colorado; San Jose, Califronia; Dade County (Miami area), Florida; Jelsinki, Finland; Copenhagen, Denmark; Hannover and Saarbrucken, Germany; Toronto, Canada; Bologna, Italy and Ankara, Turkey. The sponsoring United Nations affiliate, the Council for Local Environmental Initiatives, supports pioneering local governments in joint efforts to design and test solutions to difficult environmental problems.

In 1993, the Minneapolis and St. Paul City Councils passed the *Minneapolis-Saint Paul Urban CO2 Project Plan: A Framework for Developing Strategies to Reduce CO2 Emissions, Save Taxes, and Save Resources.* The project called for reducing, by 2005, carbon dioxide emissions by 20 percent from 1988 levels, with an intermediate goal of 7.5 percent by 1997 ("subject to future reports on specific initiatives which will clarify the costs and the tradeoffs involved in achieving the objectives and targets").

1993 GOALS FOR REDUCTION IN CARBON DIOXIDE EMISSIONS BY 2005, BY SECTOR (IN TONS)

Municipal	117,861	Energy Efficiency	2,239,912
Transportation	1,209,223	Energy Supply Strategies	468,357
Urban Reforestation	9,923	Precycling/Recycling	5,954

Rooted in the 1993 Plan is the *Minneapolis Energy Plan* which was adopted by the Minneapolis City Council in 1996. Implementation of Municipal Sector strategies with a payback of ten years or less has resulted int the following:

- Municipal Building & Street Light Retrofits: Public Works (includes parking ramps), Park & Recreation Board, Water Works, Civic Center, Public Library.

  Implementation: 1996 - December, 1998
  Est. CO_2 Reduction: 10, 054 Tons
  Projected Energy Savings: $751,969 Annually
  [16,710,783 KWH]

- Minneapolis Public Housing Authority (MPHA) improved improved energy efficiencies at 32 buildings. A programmatic agreement with HUD allows MPHA to retain the energy savings.

  Implementation: May, 1997 - May, 1998
  Estimated CO_2 Reduction: 5,144 Tons
  Projected Energy Savings: $981,201 Annually
  [KWH 2,558,898; 518,264 Therms; 133,895,631 Gallons Water]

- Minneapolis Public Schools (MPS) partnered with Honeywell to track and increase energy efficiency in city schools.

  Implementation: 1993 - 1997
  Estimated CO_2 Reduction: 36,410 Tons
  Projected Energy Savings: $3,756,942 Annually

TOTAL PROJECTED ENERGY SAVINGS	**$5,490,112**
TOTAL ESTIMATED CO_2 REDUCTION	**51,608 Tons**
CITY'S GOAL FOR CO_2 REDUCTION *	**17,861 Tons**
ACHIEVEMENT	**289%**

* see 1993 *Minneapolis-Saint Paul Urban CO2 Project Plan: A Framework for Developing Strategies to Reduce CO2 Emissions, Save Taxes, and Save Resources,* described above.

Noise

Residents who live and work in urban environments are subjected to noise from many sources, generally categorized as construction, mechanical, transportation, and domestic. With the exception of airport noise, the Environmental Section of the Inspections Division monitors noise in the city, responds to complaints involving noise, and works to prevent sources of noise from becoming neighborhood problems.

To address construction and amplified noise, Environmental Management issues permits for work done outside of regular business hours. This permit system places controls on noise sources by limiting the level and duration of noise and by imposing other mitigating conditions depending upon the circumstances. Inspectors monitor work and take steps to revoke permits when necessary.

Mechanical noise complaints generally involve problems with roof or ground mounted mechanical equipment, such as air handling equipment or exhaust systems. These problems are mitigated through regulatory orders. Corrective action varies by situation, but most commonly involves adjustment or relocation of equipment or installation of sound barriers. When necessary, equipment usage hours are restricted.

Transportation complaints are among the most difficult to resolve due to the mobility of the noise source and the complexity of intergovernmental relations. Complaints generally involve motorcycles, trucks and buses, but can also involve automobiles. These problems are resolved through contact with owners and appropriate agencies, such as MnDOT, Metro Transit, Public Works, or Licenses and Consumer Services.

Typical domestic noise issues arise over radios and stereo systems, dog-barking, chainsaws, leaf blowers, lawnmowers, and snow blowers.

In 1998, the Minneapolis City Council passed amendments to the 1997 noise ordinance to more adequately address the problem of noise pollution. Staff worked on gathering data and information for the ordinance from throughout the country. The ordinance states that it is unlawful for any person to make, continue, permit, or cause to be made or continued within the city, any loud, disturbing or excessive noise which would be likely to cause significant discomfort or annoyance to a reasonable person of normal sensitivities present in the area.

Airport Noise - Airport noise is a significant problem for Minneapolis residents, yet the City of Minneapolis has no direct regulatory authority related to airport noise and therefore has only a limited role in its control. Although the city has no direct regulatory authority related to airport noise, the city advocates measures to reduce noise impact.

A 1998 pilot's strike against Northwest Airlines caused a considerable increase in reports of outdoor activities induced by quieted skies, juxtaposed with stories of delays, hardships, and severe economic consequences.

ARRIVALS AND DEPARTURES (MAJOR AIRLINES ONLY)

Mo.	Number	Change from Prior Year
10/97	25,247	-1%
11/97	22,972	+2%
12/97	24,761	-1%
1/98	24,526	0%
2/98	22,832	+1%
3/98	25,519	+2%
4/98	24,179	-1%
5/98	23,827	-6%
6/98	23,827	-7%
7/98	25,908	-3%
8/98	24380	-8%
9/98	14304	-41%

Sound Insulation Program - One strategy for ameliorating airport noise is sound insulation of structures. The City of Minneapolis is participating in the Part 150 Sound Insulation Program for residential structures in the high impact noise area close to the airport. The program is meant to preserve and improve neighborhoods while making the internal environment of a home more compatible with exterior aircraft noise. Treatment methods address noise infiltration through doors, windows, walls and roofs. The goal is a 5-decibel reduction in sound for habitable rooms, approximately equal to doubling the distance of the aircraft from the home's roof. Eligibility for the program is determined on the basis of a periodically updated, five-year projected day/night noise level. Funding for the program is from airport and airline generated funding sources. No general, property or income taxes are used for the program.

In Minneapolis, a total of 3,525 homes have been completed through 1998, as follows:

Year	Number of Homes Completed	Cost
1992	75	$2.4 M
1993	145	$3.5 M
1994	377	$6.5 M
1995	501	$8.6 M
1996	812	$16.8 M
1997	765	$18.7 M
1998	850	$23.9 M
TOTAL	**3,525**	**$80.4 M**

The totals for other affected cities are as follows:

City	Number of Homes Completed	Cost
Richfield	634	$13.1 M
Eagan	181	$3.6 M
Bloomington	158	$3.2 M
Mendota Heights	85	$1.8 M
Sub - Total	1,058	$21.7 M
Minneapolis	3,525	$80.4 M
TOTAL	**4,583**	**$102.1 M**

Nationally, most attention and resources tend to focus on preparedness and response, because of perceptions regarding imminent, dramatic threats to public safety. The City of Minneapolis, in addition to maintaining highly developed preparedness and response functions, has been moving toward a prevention strategy by providing education, technical assistance, facilitation and regulatory oversight.

Minneapolis Emergency Plan
The City of Minneapolis has a well-developed and effective emergency plan that details the city's response to a range of emergency and disaster scenarios, often involving environmental consequences. In 1998, the city responded to incidents involving straight-line winds, flooding, hail storms, and chemical accidents. As recently as ten years ago, the city experienced a major drought.

For every natural disaster, environmental emergency or accident, it is helpful to identify four stages that constitute the "life cycle" of the event: prevention, preparedness, response and recovery.

Prevention
Prevention activities are those that either prevent the occurrence of an emergency or reduce the community's vulnerability in ways that minimize the adverse impact of a disaster or other emergency.

Preparedness
Preparedness activities, programs, and systems are those that exist prior to an emergency and are used to support and enhance response to an emergency or disaster. Planning, training, and exercising are among the activities conducted under this phase.

Response
Response involves activities and programs designed to address the immediate and short-term effects of the onset of an emergency or disaster, reducing casualties and damage, and speeding recovery. Response activities include direction and control, warning, evacuation, and other similar functions.

Recovery
Recovery is the phase that involves restoring systems to the normal state. Short-term recovery actions are taken to assess damage and return vital life-support systems to minimum operating standards; long-term recovery actions may continue for many years.

Hazardous Materials
Although the State of Minnesota bears direct regulatory responsibility for toxic chemicals by agreement with the U.S. Environmental Protection Agency (MN Department of Agriculture for pesticides, MN Pollution Control Agency and Department of Public Safety for others), local governments also play an important role in the regulatory process through zoning, environmental, and fire codes.

The City of Minneapolis faces relatively fewer threats from toxic chemicals than many more industrial areas of the country. Yet, there is potential threat to public safety. Media focus tends toward commercial and industrial users of pesticides and other toxic chemicals; yet domestic consumers are users as well, and frequently are the eventual market for products made through chemical processes. The cumulative impact of hazardous product use by households is enormous. Exposure from accidental or permitted releases from toxic chemicals, including pesticides, ought to be prevented or minimized as a matter of public policy. It is important to realize toxic chemicals used in the community must be safely used and stored, and when possible, replaced with safer alternatives.

The Built Environment and Urban Character

The urban environment in Minneapolis is enjoyed for the high quality of all of the features and systems discussed earlier in the Chapter, and also for its built environment and urban character.

The two organizations actively involved in improving the quality of the city's built environment. through efforts related to design and heritage, including buildings, neighborhoods, parks, and other open space are the Heritage Preservation Commission (HPC) and the Committee on Urban Environment (CUE). They provide assistance and recommendations and are involved in educational and outreach efforts to increase awareness of preservation, stewardship, and improvement of the urban environment.

Heritage Preservation Commission
The Minneapolis Heritage Preservation Commission (HPC) is a ten-member, citizen advisory body to the Minneapolis City Council. The HPC's primary duties include evaluating the architectural and historic significance of buildings, landscapes and areas, recommending buildings or districts for local historic designation, and reviewing all building, sign and demolition permits for designated properties.

As of November of 1998, the commission reviewed 34 building permits, 16 sign permits, 14 demolition permits and one use variance at public hearings. Staff approved 71 Certificates of No Change for minor repair work.

The HPC continues preservation education each spring with Preservation Week. Activities include the Preservation Awards ceremony, luncheon, walking tours and lectures. The HPC also hosts walking tours of historic districts in the summer and interior home tours in the winter. A grant provided funds for research to complete historic contexts and accompanying brochures for both North Minneapolis and Northeast Minneapolis.
In 1998, the HPC pursued the designation of the following significant buildings in Minneapolis:

Theodore Wirth House, 3954 Bryant Avenue South
Keyes House, 2225 East Lake of the Isles Parkway
Woman's Club of Minneapolis, 410 Oak Grove Street
Brooberg Residence, 727 East 24th Street
St. John's Missionary Baptist Church, 1119 Morgan Avenue North
Disciples Ministry Church, Inc., 1000 Oliver Avenue North
First Universalist Church, 3400 Dupont Avenue South
Handicraft Guild Building, 89 South 10th Street
Shoreham Yards Roundhouse, 2800 Central Avenue Northeast

Committee on Urban Environment
The Committee on Urban Environment (CUE) was formed in 1968 to foster improvement of the natural and built environment in Minneapolis. CUE is a citizen advisory committee with 29 members appointed by the Mayor, City Council President, and various agencies. CUE's role is to assist the Arts Commission and the Heritage Preservation Commission and advise and inform both public and private entities.

In 1998, CUE launched a campaign to support and promote the Minneapolis Beautiful Initiative, a new program to invigorate the city by celebrating the high quality of life in Minneapolis and stimulating innovative and exemplary projects.

CUE continues to be a leader in encouraging beautification and stewardship. 1998 activities included a record number of nominations for Blooming Boulevard Awards, Winter Wonder Awards, Arbor Day, and Minneapolis Pride! Day.

CUE Awards are awarded annually to promote and support design excellence.

28TH ANNUAL CUE AWARDS (1997)

Project	Location
Artscrap Mobile Project	Lyndale neighborhood
Bloomsbury Market	403 South Cedar Lake Road
Bravo Event Center	900 Hennepin Avenue
Charles Horn Terrace Community Center	115 West 31st Street / 3310 Blaisdell Av South
Crossroads Mural Project	3013 Lyndale Avenue South
Federal Reserve Bank	900 Hennepin Avenue
Franklin Avenue Gardens	Phillips neighborhood
Hosmer Public Library Renovation	347 36th Street East
Longfellow Planbook	Longfellow Neighborhood
Lunds Marketplace	1450 West Lake Street
Marquette Block Commercial Renovation	East Hennepin Avenue
Mill City Coffee	75 22nd Avenue Northeast
Minnehaha Creek Wetland Pilot Project	Cedar-Isles-Dean neighborhood
Park Siding Park	University Av Southeast &
Pleasant Street Campus Gateway	Pleasant Street
1300 Lagoon Avenue	1300 Lagoon Building
Tower Hill Committee/Tower Hill Park	Prospect Park neighborhood
Uptown Bike Rack Project	Uptown area